

REMARKS

In the Office Action, the Examiner rejected Claims 1-20 under 35 U.S.C. 102 as being fully anticipated by PCT patent application WO 92/15651 (Moon). The Examiner also repeated an earlier Restriction Requirement, withdrew Claims 21-29 due to this Restriction Requirement, and asked for affirmation of the provisional election of Claims 1-20 for prosecution in this application.

Independent Claims 1 and 11 are being amended to better define the subject matters of these claims. New Claims 30 and 31, which are dependent from Claim 1, are being added to describe preferred features of the invention. Claims 10 and 20 are being cancelled to reduce the number of issues in this application.

With respect to the Restriction Requirement, Applicants traverse this requirement, but confirm that, if the Restriction Requirement is maintained, Applicants elect the Group I claims, now Claims 1-9, 11-19, 30 and 31 for prosecution in this application.

This Restriction Requirement is respectfully traversed because curable tapes of the Group I claims are very well suited for use in the methods of the Group II Claims 21-29. For instance, as amended herein, independent Claims 1 and 11 both describe material that starts to emit a given type of light when the tape become substantially fully cured. Also, the independent method Claims 21 and 26, of the Group II claims, both describe a material which emits optical light when the tape is fully cured.

It is thus easily apparent to those of ordinary skill in the art that curable tapes of the type described in Claims 1-20 are well adapted to help implement the methods of Claims 21-29.

In addition, it is believed that a thorough search for prior art relevant to Claims 1-20 would also include a search through the prior art relevant to Claims 21-29, and vice versa. Accordingly, little, if any, searching time would be saved by restricting this application to either the Group I claims or the Group II claims.

The Examiner is, consequently, respectfully asked to reconsider and to withdraw the above-discussed Restriction Requirement and to examine all of Claims 1-9, 11-19, 21-29, 30 and 31 in this application.

With respect to the rejection of the claims over Moon, Applicants submit that Claims 1-9, 11-19, 30 and 31 patentably distinguish over the prior art and are allowable. This is because the prior art, including Moon, does not show or suggest the principal of using light to indicate that a UV curable tape is substantially cured.

As discussed in detail in the present application, in the fabrication of semiconductor devices, a curable adhesive tape is commonly used to protect the front side of the wafer during grinding; and after the grinding process, the wafer is diced and the adhesive tape is removed. Adhesive residue often remains on the wafer slices, however; and, depending on the amount of residue left on the wafer chips, it can be difficult and expensive to remove the residue. The amount of residue can be reduced substantially if the tape is fully cured. With conventional processes, though, it is difficult to determine if the tape is fully cured.

The present invention effectively addresses this problem by providing the tape with a material that emits light in a manner that indicates when the tape has become substantially cured. The prior art does not disclose or suggest this feature of the invention.

In particular, the curable tape disclosed in Moon does not operate in this way. Moon discloses a multi-step irradiation process for the production of an acrylic-based adhesive or a pressure-sensitive adhesive tape. In this process, a photopolymerizable monomer mixture is made and applied onto a substrate, and that mixture is then photopolymerized. Light is used in the process - to polymerize the mixture - but light is not used in the same way that it is used in the present invention - to indicate that the tape has become substantially fully cured.

Independent Claims 1 and 11 describe this feature. Specifically, both of these claims describe a UV energy curable tape comprising a material that starts to emit light of a given type when the tape becomes substantially fully cured. Thus, the emission of this type of light - which could be a light of a particular color, or intensity, or any other appropriate parameter - indicates that the tape has become substantially cured.

The other references of record have been reviewed, and they too, whether considered individually or in combination, also do not disclose or suggest this feature of the invention.

This feature is of significant utility because it substantially facilitates ensuring that the tape is fully cured. When the tape is used with a semiconductor wafer, for example in the manner described above, the tape can be removed without leaving any significant adhesive residue. This, in turn, reduces the cost of, and the length of time needed for, the semiconductor fabrication process.

Because of the above-discussed differences between Claims 1 and 11 and the prior art, and because of the advantages associated with those differences, these claims patentably distinguish over the prior art and are allowable. Claims 2-9, 30 and 31 are dependent from Claim 1 and are allowable therewith. Also, Claims 12-19 are dependent from, and are allowable with, Claim 11.

For the reasons advanced above, the Examiner is asked to reconsider and to withdraw the Restriction Requirement and to examine all of Claims 1-9, 11-19 and 21-31 in this application. The Examiner is further requested to reconsider and to withdraw the rejection of Claims 1-9 and 11-19 under 35 U.S.C. 102, and to allow these claims and new Claims 30 and 31. If the Examiner believes that a telephone conference with Applicants' Attorneys would be advantageous to the disposition of this case, the Examiner is asked to telephone the undersigned.

Respectfully submitted,

John S. Sensny
John S. Sensny
Registration No. 28,757
Attorney for Applicants

SCULLY, SCOTT, MURPHY & PRESSER
400 Garden City Plaza – Suite 300
Garden City, New York 11530
(516) 742-4343

JSS:jy